



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,806	11/13/2001	Linwood Anderson	20264-502	5652

7590 06/18/2003  
Ivor Elrifi, Esq.  
MINTZ, LEVIN  
One Financial Center  
Boston, MA 02111

EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,806

Applicant(s)

ANDERSON, LINWOOD

Examiner

Ngoclan T. Mai

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-28 and 46-53 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32 is/are allowed.
- 6) ☒ Claim(s) 29-31, 33, 38, 39 and 41-45 is/are rejected.
- 7) ☒ Claim(s) 34-37 and 40 is/are objected to.
- 8) ☒ Claim(s) 1-53 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. In response to applicant's telephone inquiry of June 13, 2003 regarding the last Office action, the following corrective action is taken.

A corrected and complete copy of the Office Action is followed. (Note that the status of claim 29 has been changed.)

The period for reply of three MONTHS set in said Office Action is restarted to begin with the mailing date of this letter.

### ***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-4, drawn to powder, classified in class 423, subclass 440
  - II. Claims 5-11, drawn to method of making powder, classified in class 148 subclass 206
  - III. Claims 12-27, drawn to method of making tungsten carbide-containing ceramic body, classified in class 419, subclass 18.
  - IV. Claims 28-45 and 49-53, drawn to ceramic body, classified in class 75, subclass 236.
  - V. Claims 46-48, drawn to method use, classified in class 451, subclass 28.
3. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the

Art Unit: 1742

process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the powder as claimed can be made by reducing a mixed oxides of Co, W and grain growth inhibitor in hydrogen atmosphere and then carbonizing the reduced mixed powder.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, i.e. one is the carbide powder and the other is the method of making ceramic body.

Inventions I and IV are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as coating material and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Inventions I and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, i.e. one is the carbide powder and the other is the method of using ceramic body.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, i.e. one is the method of making powder and the other is the method of making ceramic body.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, i.e. one is the method of making carbide powder and the other is the ceramic body.

Inventions II and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, i.e. one is the method of making carbide powder and the other is the method of use ceramic body.

Inventions III and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the

process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the ceramic body as claimed can be made by blending and grinding fixed amount of fine particle of WC, and Co, pressing the mixture and sintering the product in vacuum.

Inventions III and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, i.e. one is the method of making ceramic body and the other is the method of use

Inventions IV and V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used as various parts of wire drawing apparatus or nozzle in abrasive waterjet cutting machines.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and the search required for any one group is not required for the other groups, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with applicants' attorney Ivor R. Elrifi on April 23, 2003 a provisional election was made with traverse to prosecute the invention of group IV, claims 28-45 and 49-53. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-27 and 46-48 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Since claim 28 and 49-53 depended on non-elected inventions, these claims also have been withdrawn from further consideration. Should applicants want these claims to be considered as product claims applicants should redraft them in independent form.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 29-30, 38-39, 44, are rejected under 35 U.S.C. 102(b) as being anticipated Maruyama et al.

Maruyama et al discloses a sintered hard metal for use as micro-drill, tools and wear resistant parts having superior toughness and hardness with WC microstructure of 0.6 micron or less, its Rockwell Hardness is at least 91.5 and its transverse rupture strength is at least 350 kg/mm<sup>2</sup> (~ 497,817 psi), see abstract. While Maruyama et al does not specifically teach that the Rockwell A hardness is measure at 20 degrees

centigrade, it is well known or conventional that Rockwell A hardness is typically measured at room temperature which is about 20 C (see Stoll et al. col. 9, lines 1-2). The Rockwell a hardness of the sintered hard metal taught by Maruyama et al would inherently be measured at 20 C. Note that the Rockwell Hardness of at least 91.5 taught by Maruyama reads on the limitation of Rockwell A-scale hardness of up to about 96 at 20 degree Centigrade in claim 29.

8. Claims 29-31, 33, 38-39, 41-42 and 44, are rejected under 35 U.S.C. 102(b) as being anticipated by Iler et al.

Iler et al discloses cobalt-bonded tungsten carbide for use as cutting or shaping (col. 1, lines 6-9) having transverse rupture strength of over 300,000 psi and Rockwell A scale Hardness of over 91 or more, see Examples 1-9, 12 and 13 and WC with mean grain size of 0.5 micron, see col. 29, lines 65-68 and density in excess of 99%, col. 9, lines 66-71. Iler et al teaches that Rockwell A hardness is measure at ordinary and high temperature and disclose at a hardness  $HR_A$  of 87 at 800 C, see col. 7, lines 45-46. Note this reads on the limitation of at least about 90 at 800 C in claim 33 and ordinary temperature is taken to mean at room temperature, i.e., about 20 C. Note that the Rockwell Hardness of over 91 or more taught by Iler et al reads on the limitation of Rockwell A-scale hardness of up to about 96 at 20 degree Centigrade in claim 29.

9. Claims 29-30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gavish, see table 1. Note the Rockwell Hardness listed in the table reads on the



Art Unit: 1742

limitation of Rockwell A-scale hardness of up to about 96 at 20 degree Centigrade in claim 29.

10. Claims 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoll et al.

Stoll et al discloses a corrosion resistant cermet wear part comprises a ceramic component (e.g., WC) and a metal binder having transverse rupture strength of more than 300,000 psi and Rockwell A hardness of about 90, see Table II. Stoll et al teaches that the Rockwell A hardness was measured at about room temperature, i.e. about 20 C. Note the Rockwell Hardness of about 90 taught by Stoll et al reads on the limitation of Rockwell A-scale hardness of up to about 96 at 20 degree Centigrade in claim 29.

11. Claims 29-30, and 45 rejected under 35 U.S.C. 102(b) as being anticipated by Gates, Jr, et al.

Gate discloses at cutting insert having Rockwell hardness A of about 91.2 and transverse rupture strength of about 2170Mpa (~314,731 psi), see col. 5, line 49-col. 6, lines 7. Note the Rockwell Hardness of about 91.5 taught by Gate et al reads on the limitation of Rockwell A-scale hardness of up to about 96 at 20 degree Centigrade in claim 29.

Art Unit: 1742


12. Claims 29-30, 38 and 44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shaffer, see col. 8, lines 18-31.
13. Claims 29-30 and 45 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Inspektor, see col. 15, lines 49-57.
14. Claims 29-30, 38 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamermeier et al,  
  
Kamermeier et al disclose a diamond coated cutting member having the claim transverse rupture strength and Rockwell A hardness, see Col. 5, lines 15-54.
15. Claim 32 is allowed because none of the prior art teach or suggest the ceramic body having the claimed properties.
16. Claims 34-37 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims content limitations which are neither teach or suggest by any of the cited prior art alone nor the combination of them made these limitation obvious.

Art Unit: 1742

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (703) 306-4162. The examiner can normally be reached on 7:30-4:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.  
June 16, 2003